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DOE Offers $150 Million Conditional Commitment for a Loan Guarantee to Support Breakthrough Solar Manufacturing Process

Transformational Technology Could Cut Production Costs of Silicon Wafers in Half

Washington D.C. – U.S. Energy Secretary Steven Chu today announced the offer of a conditional commitment for a $150 million loan guarantee to 1366 Technologies, Inc. for the development of a multicrystalline wafer manufacturing project. The project will be capable of producing approximately 700 to 1,000 megawatts (MW) of silicon-based wafers annually using a revolutionary manufacturing process called Direct Wafer. The innovative process could reduce manufacturing costs of the wafers by approximately 50 percent, dramatically cutting the cost of solar power. Phase 1 of the project will be located in Lexington, Massachusetts and is expected to generate 70 permanent jobs and 50 construction jobs. The company is evaluating site locations for another planned phase, which they anticipate will create hundreds of additional jobs.

"This project is a game-changer that could dramatically lower the cost of photovoltaic solar cells. It is exactly the kind of innovation that puts America at the forefront of the global clean energy race," said Secretary Chu. "As global demand for solar cells increases, this kind of technology will help the U.S. increase its market share and be more competitive with other countries such as China, which currently accounts for 60 percent of the world supply of multicrystalline wafers."

The original development of the company's Direct Wafering technology was supported with a $4 million grant from DOE's Advanced Research Projects Agency - Energy program and a $3 million grant from DOE's Solar Energy Technology Program. The innovative manufacturing process condenses four manufacturing steps into a single, low cost step and greatly reduces silicon waste by forming individual wafers directly from a pool of molten silicon. A thin sheet

of silicon freezes inside the Direct Wafer furnace and is then removed and laser-trimmed to size. At full production, the entire wafer formation process is completed in just a fraction of the time relative to conventional batch processing which can take up to three days. The company's revolutionary one-step process requires ninety percent less energy and results in an industry-standard product that can be used by any standard multicrystalline cell manufacturer.

The Department of Energy's Loan Programs Office administers three separate programs: the Title XVII Section 1703 and Section 1705 loan guarantee programs, and the Advanced Technology Vehicle Manufacturing (ATVM) loan program. The loan guarantee programs support the deployment of commercial technologies along with innovative technologies that avoid, reduce, or sequester greenhouse gas emissions, while ATVM supports the development of advanced vehicle technologies. Under all three programs, DOE has issued loans, loan guarantees or offered conditional commitments for loan guarantees totaling over $33 billion to support 35 clean energy projects across the U.S. DOE has also issued conditional commitments or loan guarantees to support numerous other projects, including four of the world's largest solar generation facilities, two geothermal projects, the world's largest wind farm and the nation's first new nuclear power plant in three decades. For more information, please visit http://www.lpo.energy.gov.

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